

4

CASES

OF

ACUTE LEUCOCYTHEMIA

IN CONNEXION WITH PREGNANCY.

BY

ROBERT PATERSON, M.D., F.R.C.P.E., ETC.

(READ BEFORE THE EDINBURGH MEDICO-CHIRURGICAL SOCIETY, 4TH MAY 1870.)

EDINBURGH: PRINTED BY OLIVER AND BOYD.

MDCCCLXX.

REPRINTED FROM THE EDINBURGH MEDICAL JOURNAL FOR JUNE 1870.

CASES OF ACUTE LEUCOCYTHEMIA.

THE following cases of acute leucocythemia occurred to me within a short space of time of each other. I was then in the belief that this disease was essentially a chronic one, and always marked in its commencement by splenic or other glandular enlargements. I was unaware that this disease was liable to linger in the constitution in a masked or sub-acute form, and unmarked by any easily-recognised symptom; until the occurrence of some change-producing event in the constitution, such as child-birth, after which the rapidity of its fatal course was to be measured, not by days, but by hours. In the two cases I am about to relate, death occurred in one on the eleventh, and in the other on the fourteenth day after delivery. Doubtless the disease was lingering in the constitutions of these women long before their confinement; but in the one case which only I saw before that event, there was no symptom which would have led a practitioner to predict a bad result, either during labour or afterwards.

M. Vidal has attempted to show that the first indication of this disease is to be found in enlargement of the spleen. Thus, of 17 observations, where the duration of this disease has been calculated between the appearance of the splenic tumour and death,—

In from 3 to 6 months,	.	.	.	3 cases.
„ 6 months to 1 year,	.	.	.	5 „
„ 1 year to 18 months,	.	.	.	5 „
„ 2 years,	.	.	.	2 „
„ 2½ years,	.	.	.	1 case.
„ 4 years,	.	.	.	1 „

The mean would thus appear to be 13 to 14 months, the minimum 3 months, and the maximum 4 years.¹ Thus the disease, according to most recent authority,² is essentially a chronic one, and only recognisable by the occurrence of splenic enlargement. I hope to be able to show, as the result of my inquiries into this particular division of leucocythemia, occurring in connexion with

¹ Dictionnaire Encyclopédique des Sciences Médicales. Art. "Leucocythémie." P. 322.

² M. Isambert. See above article.

pregnancy,—that we have the means of determining the existence of this disease, even when the splenic tumour is not recognisable, or does not exist. I hope to be able to point out certain symptoms which will lead the practitioner to suspect this disease; and I can also refer him to a simple and certain means of verifying his diagnosis, viz., by means of the microscope; so looking to certain symptoms during the latter months of pregnancy, and ascertaining the state of the blood in the field of the microscope, much may be done in such cases to improve the condition of the circulating fluid before labour; to avoid that hæmorrhage which always accompanies labour under such circumstances, and which hastens the unhappy termination; and afterwards stimulate and nourish the system to a favourable result. To be aware of such a state of the circulating fluid beforehand is to be forearmed: the condition of that fluid, if it cannot be actually improved, may be prevented from increased degeneration by certain agents. Hæmorrhage during and after labour may be, if not avoided, much modified; and the condition of the circulating fluid rapidly improved afterwards.

But if we wait for splenic or other glandular enlargements, we wait too long; they are in this class of cases recognisable only when the case is hopeless, and when they are assuming such rapid development as to lead to a speedy and fatal termination.

The first case I am about to relate—that of Mrs S.—was the first that had occurred to me in practice, and I candidly admit I was quite unaware either of its nature or danger.

Mrs S., æt. 20, an exceedingly robust and healthy young woman, married, and three months afterwards became pregnant. I was asked to see her several times during her early pregnancy, in consequence of severe sickness and vomiting and other symptoms, all referable to that state. These symptoms, however, gradually passed away, she enjoyed good health, was plump and well-coloured, and able for the usual amount of exercise. I was again asked to see her, about one month before her confinement. She had then a very sallow look, with hollow eyes, and rather rapid pulse (90); but I was assured that she felt quite well,—that although sometimes slightly feverish at night, and languid in the morning, she generally felt well and in good spirits; the urine exhibited no trace of bile.

The labour came on at the time expected, and was natural, the uterine contractions were vigorous, and she was delivered of a healthy male child, ten hours after the commencement of labour. Very troublesome and persistent hæmorrhage followed the expulsion of the placenta, which, however, was readily controlled by repeated doses of *secale cornutum*. For three days she continued to improve, and milk was secreted, the lochial discharge was scanty, and her pulse was high, but her condition at the end of this period was satisfactory. About the sixth day a marked change to the worse took

place,—the pulse became more rapid (120), there was considerable heat of skin, with increased tawyness of it; there was decided enlargement of liver and spleen, and some slight increase in size could be noticed in the glands of the neck, along with difficulty in swallowing, but to no extent. It was soon after this that, in consultation with the late Sir James Simpson, to elicit the nature of the case, we determined to examine the condition of the blood. This was accomplished next day.

The blood thus examined presented an unusual number of leucocytes or white cells in the field of the microscope,—so much so, indeed, that not a fourth part of the globules in view were red corpuscles. The microscopic examination speedily cleared up the diagnosis. We had no doubt a case of leucocythemia before us, indicated by the state of the glands and blood, and we had as little doubt that we had an unpromising case—one that would eventually proceed to a fatal termination; but we had no idea that, within twenty-four hours from the discovery of the disease, death was to put an end to further experience or treatment. Within this space of time, the principal change which took place was that of rapid enlargement of the glands of the neck; the difficulty of swallowing, before noticed, increased much, and any attempt to swallow in the horizontal posture produced such feelings of suffocation that she jumped upright in bed gasping for breath; at last she could not lie down at all; sitting up on the edge of the bed afforded the greatest relief; and when I last saw her, she was thus seated, restless and desponding, with great enlargement of the lymphatic glands of the neck, and with total inability to swallow even a teaspoonful of water. Death took place suddenly on the evening of the eleventh day, apparently from suffocation and while sitting up in bed and gasping for breath, but with all her mental faculties clear to the last. The infant lived, and has been reared, and is now a healthy and robust child. A post-mortem examination was decidedly refused.

The case above related made me sufficiently alive to the necessity of watching cases exhibiting similar phenomena to the above, before their confinement, when I was asked to see Case II.

CASE II.—Mrs M'C., the wife of a policeman, was confined under the hands of a midwife, who requested my assistance, in consequence of considerable hæmorrhage after delivery. As this case occurred within a few weeks of the one I have just described, and as her appearance much resembled the other, I made a somewhat careful inquiry into her history and symptoms, as well as a minute examination into the state of the patient at the time. She was a primipara. She was originally of delicate habit of body, but was strong and well when she married. She suffered much from the early symptoms of pregnancy, and especially from severe sickness and vomiting, and for long she could take little or no food. Along with these symptoms, she became pale and languid; had to

remain in bed the most part of the day, and became quite unable for any active employment about the house. Towards the close of her pregnancy, she became very yellow or sallow coloured,—so much so, as to induce her neighbours to declare that she laboured under jaundice; but some skilled old woman in the neighbourhood declared this was not so, from an examination of the urine. This history brings me up to the point at which I saw her after her confinement. She had lost a considerable quantity of blood; was pale and very sallow, especially around the mouth, nose, and eyes; but the blood which she had lost did not appear paler than usual; considerable enlargement of the spleen and liver was recognised, at the time I was exciting the contractile action of the uterus. Next day at my visit, I made a more careful examination of those organs, and also of the blood microscopically. The edge of the spleen was distinctly felt more than half-way between the false ribs and iliac bone, while the liver occupied an extended space of more than two inches below the ribs, occupying fully the half of the epigastrium, besides pressing considerably upwards. There was slight enlargement of the lymphatic, thyroid, or other glands. The pulse was rapid—120; the breathing laboured; no abnormal sounds in respiration; there was a bruit along the arteries in connexion with the first sound of the heart. The child was alive, and apparently healthy. The blood in the field of the microscope was full of white cells, and after a short time the blood-discs arranged themselves into rows, while the white or rather transparent cells occupied the greater part of the field of the microscope. It is no doubt loose language to talk of the blood being full of white cells, or containing a large or considerable number, but I had really no means of calculating the relative proportions of white cells and coloured corpuscles, so that I only state generally the impression it gave me at the time. This patient got all kinds of nourishment, with iron preparations and stimulants, but she never had any secretion of milk; the lochial discharge was pale and scanty; the fever increased, the pulse becoming gradually more rapid, with greatly increased restlessness; she could not sleep, and morphia and nepenthe failed to soothe her. Gradually the fatal enlargement of the lymphatic glands of the throat and neck and upper part of chest occurred, increasing slowly, and as surely gradually cut my patient off by asphyxia fourteen days after confinement. Death in this case occurred very much in the same way as in the former one, only more slowly and exhaustively. I had repeated opportunities of examining the blood of this patient from the day after her delivery till the day of her death, and I could not recognise any increase in the number of white cells or diminution of those of the red. A post-mortem examination in this case was also denied.

Since the occurrence of the two cases above described, I have been watchful over all the cases of pregnancy I have seen, and have

especially noted and examined the blood of those who presented much sallowness of skin, much languor and inability for exertion, and I have contrasted this with a similar examination of the blood of pregnant women in whom no such symptoms were to be noticed: women of healthy and ruddy complexion, and free from languor and bodily inactivity. The result has been remarkable, in so far as that, in almost every sallow case, with complaints of weakness and listlessness, and yet without any recognisable enlargement of spleen, liver, or other glands, the blood has been found to be charged with leucocytes, while not a single white cell was to be seen in those of the ruddy and otherwise healthy women. Pregnancy, says M. Vidal, in four cases out of ten, is the commencement of the disease. Out of a number of cases which I have watched carefully during the latter months of pregnancy, the sallowness of whose skin, and the languor of whose system was specially remarkable, I shall give the history of one whose symptoms and the condition of whose blood gave me much anxiety, both as to the result of her labour and her recovery from it. Both the labour and convalescence have terminated favourably,—a result I could hardly at one time have contemplated.

Mrs L. consulted me early as to the state of her health. She stated that she was about five months pregnant of her fourth child; that she had had much hæmorrhage with her last baby, from which she had never entirely recovered; that her present ailments were principally languor, lassitude, and inability for any exertion, and, with the exception of a slight cough, she had no other symptom of the least consequence. She presented a pale sallow complexion, with feeble and rapid circulation, poor appetite, some morning sickness, with tendency to faint; no disease was discoverable in the chest. I had just become cognisant of the effects of leucocythemia in pregnant women, and very shortly afterwards took an opportunity of examining the blood of this patient under the microscope, and also of ascertaining the condition of the spleen, liver, and other glandular organs. This examination led me to the discovery of a large area of white cell-blood, but without being able to recognise any enlargement of the liver or spleen; there was, however, a certain amount of turgescence of the glands of the neck—a symptom which materially increased during the latter stages of her pregnancy, but was unaccompanied with difficulty of swallowing. The thyroid and submaxillary were the glands most affected. The treatment recommended was iron tonics, with stimulants, and abundance of carriage exercise in the open air. I cannot say that much improvement resulted from this means, for she continued to increase in sallowness and general weakness. At last the anxious period of her confinement arrived. I had determined to resist the use of chloroform, and to give ergot as soon as the state of the parts admitted; so, when labour advanced to nearly the full dilatation of the os uteri, I gave repeated and full doses of this drug. The

result was satisfactory ; the pains soon assumed a persistent character, and the child was delivered, after a labour of six hours' duration, well and healthy. The uterus contracted firmly, the placenta was thrown off naturally, and no post-partum hæmorrhage occurred. Liberal diet, with wine, was allowed from the moment of her confinement, and a slow but steady recovery followed. During the period of nearly four months over which we have travelled, the state of the blood was frequently examined, and I could not say that on any of these occasions I could discover a smaller number of leucocytes than existed at my first trial. There seemed always to be about the same number of white cells and rows of blood-corpuscles. I also examined the blood lost per vaginam at her confinement, and found it to contain about the usual number. Since her confinement, however, there has been a decided diminution of white cells, her countenance has assumed a more ruddy and healthy appearance, and she has been able for some little exertion, without fatigue. Six weeks afterwards she was sent to the country, and I have heard that she is steadily progressing to complete recovery. I may state that the enlargement of the glands of the neck was somewhat persistent, not having diminished materially, although they gave little discomfort, when I last saw this patient.

It is impossible for me to say what element in the history of this most interesting case is the one most conducive to practical results or to future practical guidance. My own impression is that, by saving the blood after confinement, we gained, as it were, the first step to future good results. All, it will be observed, was most unsatisfactory up to the period of confinement ; but after that event, which was accomplished without prolonged suffering, and with no subsequent hæmorrhage, a steady and favourable progress was initiated, and a naturally good constitution allowed a fair start towards recovery. How these leucocytes are thrown off I do not pretend to determine ; but as Virchow is clearly of opinion that they are never under any circumstances converted or changed into ordinary blood-corpuscles, so we must presume that they are eliminated from the body by some other means, most probably by the lungs. Still I should suggest that other means used in this case ought not to be neglected, such as the persevering use of iron, stimulants, and other forms of nourishment, both administered before and after confinement. The effect of this disease is curious as regards the fœtus. The mother's blood was charged with leucocytes, and consequently there was a proportionate diminution of the blood-corpuscles in the maternal circulation, yet the children suffered in no way, and were robust and healthy when born. This was the result of my three cases, demonstrating as it does most clearly the important physiological fact, that there is no direct communication between the blood of the fœtus and that of the mother.

